






SPECIFICATIONS SHEET FOCUS-1, DN 80 & 3 inch

FOCUS-1 and FOCUS-1_Ex

MEDIA		Single phase liquid with <5% solid content, <2% gas content and max. Viscosity up to 150 cSt						
APPLICATIONS		Direct Flow control applications can replace a valve or a combination of valves with other flow control applications						
DESCRIPTIONS		CONTROL ELEMENT		MEASUREMENT SENSOR ELEMENTS				
ELEMENT NAME		Valve		Flow	Pressure	Temperature		
TECHNOLOGY		Valve position % or Process control		Ultrasonic flow measurement	Thin film technology	PT 100		
DEVICE INFORMATION		DN 80 and 3 inch				Velocity of sound	Inlet pressure	Temperature
						Volumetric flowrate	Outlet pressure	
							Differential pressure	
Overall Control Accuracy		With an inbuilt PID controller, control accuracy is < 1%	Measurement accuracy	Uncertainty better than 0,5% of setpoint value and stability better than + 0,2%.				
Max flow velocity		Typically, up to 7m/s	Pressure measurement range	0 to 40 bar.g 0 to 300 lbs.				
Rangeability		50:1	Burst pressure	120 bar g				
Face to Face		As per ISA 75.08 or EN 558-1	Temperature measurement range	-40 up to 180 °C				
MATERIAL OF CONSTRUCTION		Body / Bonnet	1.4408 / ASTM A351 Gr.CF8M	Bonnet	AISI 316L / A351 CF8M			
		Stem	1.4404 / 316L	Process Connection	1.4404 / 316L / A351 CF8M			
		Plug	1.4404 / 316L	Housing	1.4404 / 316L			
		Seat	1.4404 / 316L	Sensor Diaphragm	1.4548 / 17-4PH			
		Packing / Gasket	PTFE/PTFE with Carbon PTFE / Graphite on metal core Silicone					
DEVICE PARAMETERS		Seat leakage	ANSI Class IV & ANSI Class V		DEVICE PARAMETERS Electrical connection Spring clamp connections according to VDE 0100 Air Filter Regulator Optional Pneumatic conn. 1/2" NPT Air supply min/max 3.8 Bar.g / 6 Bar.g Power supply 100 ... 230 V a.c., 50/60 Hz 18 ... 32 V d.c. Power Consumption < 30 VA (AC variant) < 30 Watt (DC variant) Cable entry connection compartment M20X1.5 - metallic cable glands *Standard for FOCUS-1 (non-Ex) *IECEX, ATEX Ex eb certified for FOCUS-1_Ex (Ex variant)			
		Size	SB 38: Kv25 or Cv30 SB 63: Kv60 or Cv70 SB 80: Kv80 or Cv95 for 100% Opening					
		Pressure class	PN 16 / PN 40 ANSI 150 # / 300#					
		End connection	Flanged connections according to ANSI B16.5 or DIN/EN 1092-1B1 <Ra 3,2 ... 12,5µm>					
		Trim type	Standard V - Port plug, with Metal seal					
		Flow characteristics	EQ %					
		Total Weight = approx. 90 kg						



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FOCUS-1 DEVICE PARAMETERS			PRE-REQUISITES FOR INSTALLATION		
Design pressure Min. / Max.	Depends on the pressure class		Inlet run	Min. 4 DN (Straight inlet)	
Design temperature Min. / Max.	-20°C/ -40 °C up to +180 °C		Outlet run	0 DN (Straight outlet)	
Ambient conditions Min. / Max.	-20 °C up to +55°C		Face to Face Dimension	3" inch ANSI 150 : 298mm 3" Inch ANSI 300 : 318mm DN 80 PN 16 : 310 mm DN 80 PN 40 : 310 mm	
DEVICE MANAGEMENT & VALUE-ADDED FEATURES			APPROVALS & CERTIFICATES		
General	An integrated measurement & control device with capabilities to measure flow, pressure & temperature & also control flow. Powered with an onboard computer with diagnostic capabilities & generating real-time product & process alarms.	NAMUR	NE21, 43, 53, 80,107		
Input & Output	FOCUS-1_Non-Ex: 4 - 20 mA current input with HART7 [®] passive 4 - 20 mA current output passive and active FOCUS-1_EX : 4 - 20 mA current input passive 4 - 20 mA current output with HART7 [®] passive 4 - 20 mA current input passive (see external sensor)	Ingress Protection IEC 529/EN60529	IP44 / IP66		
External Sensor Input	4 - 20 mA current input passive via an external sensor as a set point (available only for the Ex-variant).	CE	2014/68/EU - RED Radio Equipment		
Digital Twin Technology	Sensor redundancy is based on an algorithm board that uses correlation of dynamic process data to generate model values for key process parameters like flow, pressure & temperature in case of sensor failure.		2014/68/EU - PED Eq. under pressure		
Remote Access for Control & Maintenance	User-based controlled access to the device through Wi-Fi with a single button on the device or via wired ethernet connection with dual password protection to the internal web server on a smartphone, tablet, or laptop for easy and secure installation, configuration & maintenance.		2006/42/EU Machinery Direct.		
Set point Control	With integrated sensor technology & onboard PID controller, Process control can be through set points via valve position, flow, in and outlet pressure & also pressure drop for fast & accurate control in the process loop.		2014/34/EU - ATEX Eq. for HAZLOC		
PID Auto Tuning	Algorithm-based autotuning of inbuilt PID controller reaction to setpoint changes and unmeasured disturbances such that variability of control error is minimized to ensure consistent product quantity.	Hazardous Area Classification (HAZLOC)	2011/65/EU - ROHS		
Single button control & Bluetooth	Single button for easy and secure installation & maintenance access via smartphone, tablet, or laptop		Humidity	15%-100%	
Wi-Fi	According to standard 802.11 b/g/n Range: up to 180 m Frequency: 2.4 GHz to 2.4835 GHz Operating channels-11: (Ch. 1-11) - USA & North America -13: (Ch. 1-13) - Europe -14: (Ch. 1-14) - Japan	Hazardous Area Classification 	Altitude	2000m	
Communication protocols	4-20mA, HART7 [®] (non-Ex and Ex variants), Profinet (non-Ex variant only), EtherNet/IP (non-Ex variant only)		Europe : ATEX II 2G Ex eb db [ib] IIB+H2 T4/T5 Gb		
Health status communication	Communication via LED Ring in colors as per NAMUR NE107 & NE43 standards and via HART7 [®]	Shock Resistance	International: IECEx Ex eb db [ib] IIB+H2 T4/T5 Gb		
Languages dashboard	English, German , French		IEC 65-2-2730g for 18ms		
On board data storage	Timestamped logs of process & diagnostic data, sufficient for 14 months of condensed data and 14 weeks of raw data.	Vibration Resistance	IEC 68-2-6; 0,5g 1800Hz up to 1800 Hz IEC 60721; 15g		
Webserver	Integrated for installation & service		IT Security	According to IEC 62443 (no certificate)	